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A PROPOSED RESEARCH PROJECT TO COMPARE WCPFC AGGREGATED HISTORICAL VMS DATA WITH AIS DATA ON THE WCPFC HIGH SEAS

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SUBMITTED BY JAPAN

A proposed research project
to compare WCPFC aggregated historical VMS data with AIS data
on the WCPFC high seas

The Japan Fisheries Research and Education Agency (FRA) has been in a collaborative partnership agreement with a global non-profit organization, Global Fishing Watch (GFW), and the Australian National Center of Ocean Resources and Security (ANCORS) at the University of Wollongong to investigate illegal, unreported and unregulated (IUU) fishing, and strengthen transparency and governance of fisheries.

Among such collaborative work, we would like to draw the attention of CCMs to an interesting proposed research project, which intends to compare WCPFC aggregated historical high seas VMS data with Automatic Identification System (AIS) data (details of the research project are attached). Expected outcomes from the research project could include;

- Estimation of AIS data coverage
- Estimation of the total fishing effort on the WCPFC high seas

AIS data can provide basic vessel information (identity, position, course and speed) at a high frequency, but in order to accurately estimate fishing effort, it is important to understand the level of coverage of AIS in fishing fleets by comparing with WCPFC VMS data.

This proposed project will improve our understanding of fishing effort on the WCPFC high seas, which will bring significant benefits to our future consideration and design of WCPFC conservation and management measures.

Japan proposes that this project be conducted as a WCPFC project because the results will be beneficial to all CCMs and because this project needs to have access to WCPFC VMS data. Details of the project including proposed timeline and specifications of required WCPFC high seas VMS data are shown in the attachment.

Japan will handle aggregated VMS data received from the Secretariat in accordance with relevant rules and procedures on data handling. All data will be held in a secure facility at FRA in Yokohama, and access will be limited to one analyst.

Research project to compare WCPFC aggregated historical VMS data with AIS data on the WCPFC high seas

Japan Fisheries Research and Education Agency (FRA)
Global Fishing Watch
Australian National Centre for Ocean Resources & Security (ANCORS)
University of Wollongong

Research Project Purpose:
Our project aims to estimate Automatic Identification System (AIS) high seas vessel coverage through comparing aggregated VMS data with publicly available AIS data. The purpose of this analysis is to enable future scientific studies of open-source AIS data that will improve our understanding of fishing effort. The AIS coverage estimates will be presented to the WCPFC Scientific Committee in 2020, enabling all members to subsequently undertake their own scientific studies of AIS data.

Research Project Summary:
The Japan Fisheries Research and Education Agency (FRA), Global Fishing Watch (GFW) and the Australian National Centre for Ocean Resources and Security (ANCORS) at the University of Wollongong are research partners in an innovative project to develop new open-source technologies and platforms to study fisheries and support ocean sustainability.

Our project will estimate AIS high seas vessel coverage through comparing aggregated VMS data with publicly available AIS data. The study outcomes and AIS coverage estimates will be presented to the WCPFC Scientific Committee in 2020. These estimates will then enable WCPFC members and science providers to undertake scientific studies of open-source AIS data that will improve our understanding of fishing effort, and potentially inform the subsequent design of WCPFC conservation and management measures. This will provide a form of technology transfer at no-cost to WCPFC members and thereby support implementation of Article 30 of the WCPF Convention which, among other things, commits to increase scientific knowledge, develop research capacity and transfer marine technology.

AIS is a maritime broadcast technology designed to support collision avoidance and safety at sea. Consequently, AIS is publicly accessible and can provide basic vessel information (identity, position, course and speed) at a high frequency. This high frequency can provide sufficient data to enable research and policy development applications relevant to the conservation and sustainable use of marine resources. However, in order to accurately estimate fishing effort, it is important to understand the level of coverage of AIS in fishing fleets. While AIS coverage is

increasing, it is not compulsory for the high seas in the WCPO Convention Area and is likely to be variable between fleets.

Our study proposes to compare aggregated AIS data from the Global Fishing Watch database with aggregated historical WCPFC high seas VMS so as to estimate fleet coverage. In order to avoid any breach of confidentiality provisions, the project will handle aggregated historical WCPFC high seas strictly in accordance with the Rules and Procedures for access to High Seas VMS Data for Scientific Purposes[1], as well as in close communications with the WCPFC Secretariat and the SPC-OFP.

We understand that the proposed request is consistent with the functions of the Commission, as articulated in Article 10(e); '*compile and disseminate accurate and complete statistical data to ensure that the best scientific information is available, while maintaining confidentiality, where appropriate'*. In this context, we request your approval to study aggregated historical WCPFC high seas VMS data within the following specifications:

- Aggregated to 1x1 degree at monthly intervals
- Aggregated to flag and vessel type
- Limited to 2015, 2016, 2017 and 2018 (older than 2 years as per data rules)
- Limited to the high seas

All data will be held within FRA in a secure facility at FRA in Yokohama, and access will be limited to one analyst. As per the 2009 Rules, the authorized management personnel will submit a data request form as per annex 1 of appendix 3, and sign the confidentiality agreement as per annex 2 of appendix 3 of the 2007 Rules and Procedures. We will then destroy all aggregated data as soon as the study is completed, within 12 months of receipt

The planned timeline for our study is:

- Jan-Feb 2020: Research team review data, design and methodology planning workshop
- Mar-July 2020: Analysis
- Aug 2020: Preliminary report presented to WCPFC Scientific Committee 2019
- Dec 2020: First report submitted to WCPFC

If you have any questions regarding our research project, please contact Dr. Shinji Uehara at ueshin@affrc.go.jp. Project partner, Associate Professor Quentin Hanich at hanich@uow.edu.au, will also be present at the Commission in December, and able to address any questions and provide further information if required.

[1] Full title: Rules and Procedures for the Protection, Access to, and Dissemination of High Seas Non-Public Domain Data and Information Compiled by the Commission for the Purpose of Monitoring, Control or Surveillance (MCS) Activities and the Access to and Dissemination of High Seas VMS Data for Scientific Purposes, 2009.

Japan Fisheries Research and Education Agency (FRA)
FRA is a public organization, established on April 1, 2016 through a merger of the Fisheries Research Agency (originated from 9 institutes of Fisheries Agency of Japan, Ministries of Agriculture, Forestry and Fisheries) and the National Fisheries University. The FRA aims to maximize research and development (R&D) outcomes as the only comprehensive fisheries R&D organization in Japan. The FRA is contributing to the revival of Japan as a nation of fisheries by maximizing R&D outcomes.

The Australian National Centre for Ocean Resources and Security (ANCORS) at the University of Wollongong is a globally recognized academic center of excellence for ocean governance and marine resource security. We bring together teams of specialist lawyers, political scientists and international relations experts, geographers, marine biologists and social scientists to design, innovate and integrate ocean law, maritime management and marine policy. We provide real-world research outcomes that assist decision makers and enhance the quality of policy-making.

Global Fishing Watch (GFW) is an international non-profit organization committed to advancing the sustainability of our oceans through increased transparency. By harnessing cutting edge technology, our mapping platform allows anyone to view or download data and investigate global fishing activity in near real-time, for free. GFW was founded in 2015 thanks to the support of our funding partners and technology and data providers.